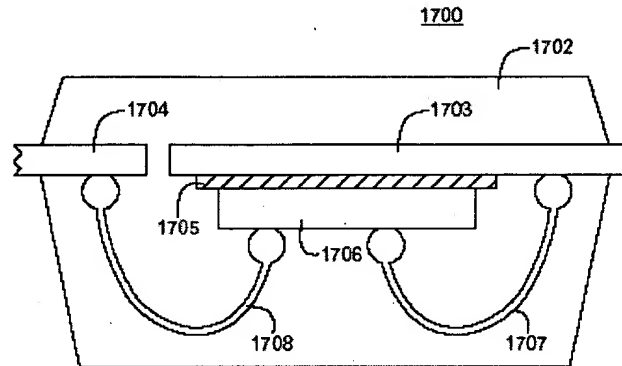


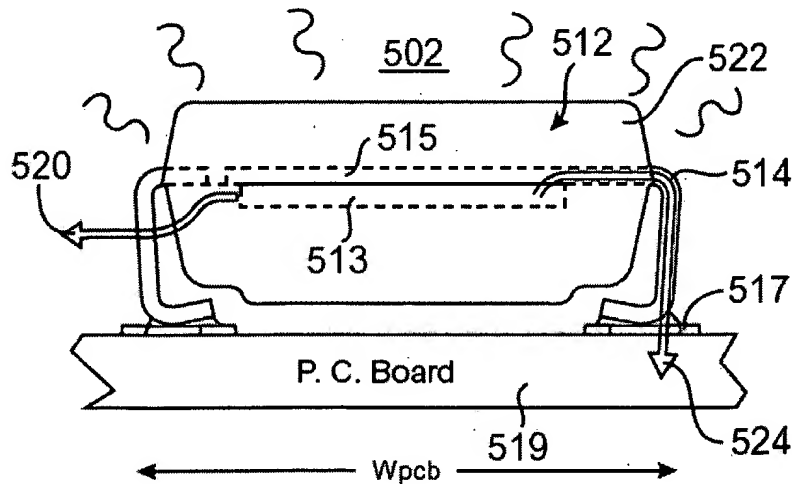
**REMARKS/ARGUMENTS**

No claims are canceled or added by this response. Accordingly, claims 1-2 and 4-7 remain pending.

Embodiments in accordance with the present invention relate to packages exhibiting a reduced vertical profile. In particular, Figure 17 (reproduced below) illustrates an embodiment wherein die (1706) is positioned on the underside of lead frame (1703), with bond wire (1708) extending from the lower surface of the die to contact the underside of the lead (1704):



This configuration conserves vertical space by allowing the thick portion of the body encapsulating the bond wires, to occupy a space lower in the package. As shown in Figure 5C (reproduced below), notches in the side of this lower thick portion of the package are configured to make space for lead ends, allowing the package to rest close to the underlying PC board:



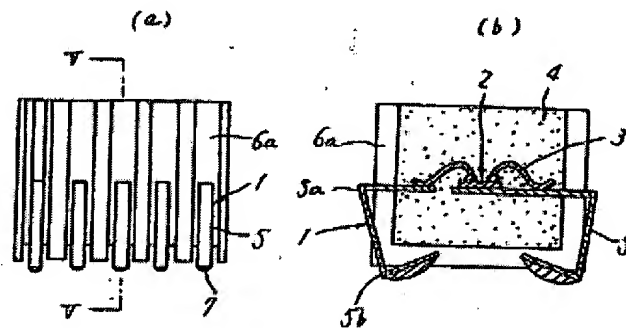
Accordingly, pending independent claim 1 recites as follows:

1. A small footprint semiconductor device package comprising:  
 . . . a second lead nonintegral with the second side of the diepad and in electrical communication with the die through a bondwire, the second lead including an enclosed portion by the package body and in electrical communication with the die, and an exposed portion of the second lead extending from the side of the package body, folding back along the side of the package toward the bottom of the package at a first angle, and folding underneath the package bottom toward a center of the bottom of the package to form a second lead foot having a reverse gull wing shape, whereupon the portion of the second lead along the side of the package and the portion of the lead along the bottom of the package form an angle of less than 90° from each other and the second lead foot being inclined at a second angle relative to an underlying planar PC board to promote solder wetting, wherein a first side of the die is in contact with the first side of the diepad proximate to the first and second lead feet, and wherein a first end of the bondwire is in contact with a side of the enclosed lead portion proximate to the first and second lead feet, and a second end of the bondwire is in contact with a second side of the die proximate to the first and second lead feet.

In the latest office action, the Examiner rejected the pending claims as obvious based upon Japanese Patent Publication No. JP359161851A to Yoshida ("the Yoshida publication") in combination with other references. These claim rejections are traversed as follows.

A first requirement to establish a prima facie case of obviousness, is that the combined prior art references must teach or suggest all of the claim limitations. (MPEP 2143).

A full English language translation of the Yoshida publication has previously been provided. Figures 5(a)-(b) of the Yoshida patent illustrate a package (4) having side grooves (6a) continuous with bottom grooves (6b - referenced but not labeled) running along the bottom of the package at the location of the leads (5) (See page 4, lines 30-31).



As conceded by the Examiner however, the Yoshida publication contains no teaching or even suggestion to flip the orientation of the diepad/lead structure in the manner claimed, such that the die is in contact with the side of the diepad proximate to the lead feet, and wherein the bond wire is in contact with the lead and the die on the side proximate to the first and second lead feet", as is recited in pending claim 1. (Office Action Mailed April 28, 2005, page 3, lines 16-19)

In an effort to provide such a teaching, the Examiner has combined the Yoshida publication with Japanese Patent Publication No. 62-117355 to Komatsu et al. ("the Komatsu publication"). However, the Examiner is reminded of a second key requirement for establishing a prima facie case of obviousness:

there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. (MPEP 2143).

The teaching or suggestion to make the claimed combination must be found in the prior art, not in applicant's disclosure. In re Vaeck, 947 F.2d 488 (Fed.Cir. 1991).

Here, there is no absolutely suggestion, either in the references themselves or in knowledge generally available, that would motivate one of ordinary skill in the art to look to combine the Yoshida publication with the Komatsu publication.

A full translation of the Komatsu publication is attached hereto for the Examiner's reference. As illustrated in Figures 1(a)-(b) (reproduced below from left to right), the Komatsu publication describes a process for readily fabricating packages that are mirror images of one another, facilitating their arrangement on either side of a common conductor:

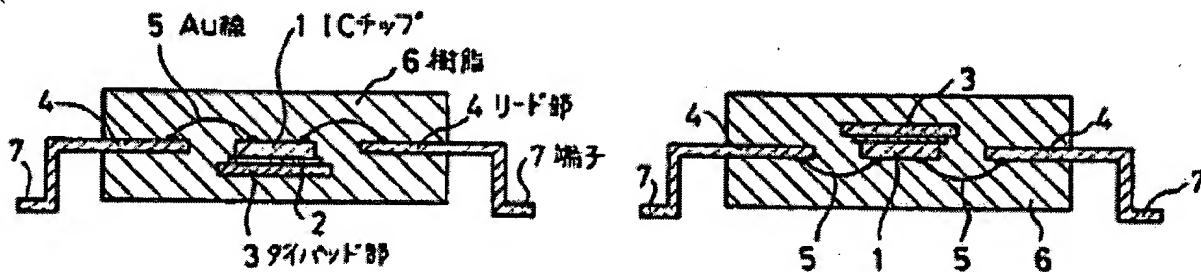


Figure 1(a) shows the ends of lead parts 4 bent at a right angle away from the surface where the semiconductor is mounted on the leadframe, as in the conventional integrated circuit shown in Figure 2, and Figure 1(b) shows the ends of lead parts 4 bent in the opposite direction. . . . when said integrated circuits are placed as a pair, terminals with the same terminal numbers face each other, so that they can be easily connected to the same conductors while avoiding the risk of miswiring. (Emphasis added; page 3, lines 13-21)

Symmetry about the location at which leads leave the package body, is thus a key attribute of packages fabricated according to the Komatsu publication. This symmetry allows the leads to be bent in either direction along the side of the package during fabrication, without inhibiting operation or placement of the package.

This symmetry required by packages of the Komatsu publication, stands in marked contrast with the asymmetry exhibited by packages of the Yoshida publication. Specifically, again with reference to Figures 5(a)-(b) (reproduced above), the Yoshida publication illustrates and describes packages having a notch present along the bottom and sides, but not the top, of the package.

Given that packages of the Yoshida publication conspicuously lack the key symmetry attribute required by Komatsu, it is difficult to understand why the Examiner believes one of ordinary skill in the art would have been motivated to modify a package of Yoshida according to Komatsu. Indeed, the sole reason Komatsu inverts the orientation of the die/diepad/leadframe, is to achieve placement of packages about a common conductor with the same contact facing the common conductor. Such motivation for package inversion is absent for an asymmetrical package of the type shown by Yoshida, as explicitly evidenced by the Komatsu publication's characterization of an asymmetrical package (Figure 2) as "conventional" and hence unsuited for use in the manner taught by Komatsu. In sum, there is absolutely no teaching or suggestion in the Yoshida or Komatsu references to motivate one of ordinary skill in the art to combine these references.

Of course, the instant application is replete with explicit suggestion regarding positioning a die on an underside of a diepad, with bond wires attached in the manner claimed. However,

the Examiner is strongly cautioned against relying upon Applicants' own disclosure in order to provide any motivation to combine the references:

[t]he tendency to resort to "hindsight" based upon applicant's disclosure is often difficult to avoid due to the very nature of the examination process. However, impermissible hindsight must be avoided and the legal conclusion must be reached on the basis of the facts gleaned from the prior art. (Emphasis added; MPEP 2142).

This strict prohibition against the use of hindsight, coupled with the lack of any apparent motivation in the Yoshida and Komatsu publications themselves for their combination, precludes any legitimate conclusion of obviousness based upon these references. Maintenance of the obviousness rejections is improper, and these rejections should be withdrawn.

Finally, it is noted that the other reference relied upon by the Examiner also fails to teach or suggest the claimed configuration of die, diepad, and leads. Specifically, U.S. patent no. 6,433,418 to Fujisawa et al. ("the Fujisawa patent"), describes a package having (1) a die supported by leads rather than a diepad, and (2) the feet of the leads positioned on top of the package. The Fujisawa patent fails to teach, or even suggest, a configuration wherein bond wires contact surfaces of the die and lead proximate to the lead feet, as recited by the pending claims.

In view of the foregoing, Applicants believe all claims now pending in this Application are in condition for allowance and an action to that end is respectfully requested. If the Examiner believes a telephone conference would expedite prosecution of this application, please telephone the undersigned at 650-326-2400.

Respectfully submitted,



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